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RELATIONSHIP BETWEEN SLEEP DEPRIVATION AND ACADEMIC ACHIEVEMENT OF 10TH STANDARD STUDENTS

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ABSTRACT

The aim of the present work was to explore the relationship between the Sleep Deprivation and Academic Achievement of 10th standard students in Coimbatore, Tamil Nadu. A survey research was adopted for the study. 150 students from different types of schools in Coimbatore district were selected as sample by stratified random sampling techniques. Among those 75 students were male and 75 students were female and also, 75 students were from urban locality and 75 students from rural locality. The researcher developed a tool for Sleep Deprivation that includes 20 items with five point ranting scale such as always = 5, usually = 4, sometimes = 3 , hardly ever = 2, and never =1. Spearman correlation reveals that there is a negative correlation (r = -0.57) between Sleep Deprivation and Academic Achievement. The male students have more Sleep Deprivation than the female students. The out campus students have more Sleep Deprivation than the in-campus students.

KEYWORDS :*Sleep Deprivation , Academic Achievement , learning, decision making and critical thinking .*

INTRODUCTION :

Sleep is an active, repetitive and reversible state of perceptual disengagement from the environment including unresponsiveness to it. Children and adolescents require an average sleep time of approximately 9 hours per night. Sleep serves several different functions such as growth and repair, learning or memory consolidation and restorative processes and all these occur throughout the brain and body. So, adequate amount of sleep is fundamental for the mental and physical health of an individual. Cognitive functions related to academic such as memory consolidation, learning, decision making and critical thinking are all related with adequate sleep. Studies have shown that Sleep Deprivation can cause psychiatric disorders and stress as well as dysfunctions such as decreased work efficiency and learning disability. Sleep restriction studies on healthy adults by restricting sleep below 7 hours per night suggest deficits in cognitive functions (Durmer and Dinges, 2005).

It is mentioned that the association between sleep and cognitive function is based on the idea that shortness or disruptions of sleep reduces necessary overnight brain activity that is needed for neurocognitive functioning which involves the prefrontal cortex (Dahl, 1996). The consequence of

insufficient sleep is the day time sleepiness. Poor sleep quality, insufficient sleep and sleepiness are significantly associated with worse school performance (Dewald et al., 2010). Sleep is an active, repetitive and reversible behavior serving several different functions, such as repair and growth, learning or memory consolidation, and restorative processes: all these occur throughout the brain and the body. Sleep loss is, in fact, one of the most striking problems of modern society. The purpose of this study was exploring the relationship between the Sleep Deprivation and Academic Achievement of 10th standard students in Coimbatore, Tamil Nadu.

REVIEW OF RELATED LITERATURE

Alya Atieah Al Ghamdi (2013) explored a study on the relationship between the Sleep Deprivation and academic performance of students in collage of nursing at King Saud University. An explanatory and exploratory cross sectional study was done. 114 students; 10 of them master students and 104 undergraduate students were included in the study representing all college levels expect the preparatory year. The researcher developed a tool that includes academic\ performance, technology use and sleep patterns and extracurricular activities. The study related that majority of the subjects included in the study use various habits that deprived them from sleep especially the night before exam.

Giuseppe Curcio, Michele Ferrara, Luigi De Gennaro (2006) have highlighted the relationship between sleep, learning and memory processes, an in-depth analysis of the effects of Sleep Deprivation on student learning ability and academic performance would appear to be essential. Most studies have been naturalistic correlative investigations, where sleep schedules were correlated with school and academic achievement. Nonetheless, some authors were able to actively manipulate sleep in order to observe neurocognitive and behavioral consequences, such as learning, memory capacity and school performance. The findings strongly suggest that: (a) students of different education levels (from school to university) are chronically sleep deprived or suffer from poor sleep quality and consequent daytime sleepiness; (b) sleep quality and quantity are closely related to student learning capacity and academic performance; (c) sleep loss is frequently associated with poor declarative and procedural learning in students; (d) studies in which sleep was actively restricted or optimized showed, respectively, a worsening and an improvement in eurocognitive and academic performance. These results may be related to the specific involvement of the prefrontal cortex (PFC) in vulnerability to sleep loss. Most methodological limitations are discussed and some future research goals are suggested.

OBJECTIVES OF THE STUDY

- To find out the significant relationship between Sleep Deprivation and Academic Achievement of 10th standard students.
- To find out the significant difference between male and female students in Sleep Deprivation.
- To find out the significant difference between in-campus and out campus students in Sleep Deprivation.

HYPOTHESES OF THE STUDY

1.There is a significant relationship between Sleep Deprivation and Academic Achievement of 10th standard students.
2.There is a significant difference between male and female students in Sleep Deprivation.
3.There is a significant difference between in-campus and out campus students in Sleep Deprivation.

Method: The purpose of the study is to find out the relationship between Sleep Deprivation and Academic Achievement of 10th standard students. Hence a survey research was adopted for the study.

Population: 10th standard students of Coimbatore district in Tamil Nadu are the population of the study.

Sample: One fifty 10th standard students from different types of schools in Coimbatore were selected by stratified random sampling technique. Among those 75 were female, 75 were male and also 75 were in-campus students (hostel students), 75 were out-campus students (day students).

Tools

A questionnaire was developed by the researcher for data collection that contains questions on demography, sleep habits including sleep and wake-up time, total sleep hours, afternoon nap etc., during weekdays and weekends. Their perception on ideal sleep duration required for good Academic Achievement was also recorded. The questionnaire was pre tested by conducting a mini pilot study.

Academic Achievement was assessed by first term average mark of the sample in school. The score was calculated to 100 marks. Consent was taken from participants to participate in the study as well as to disclose their percentage of marks in the first term. Each participant was asked to answer all the items in the tool. All answers were kept confidential.

Data Analysis

Table-1 showed the Mean of Sleep Deprivation of male and female students, and in-campus and out campus students. The mean of Male students' Sleep Deprivation is 84.42 and Female students' Sleep Deprivation is 65.24. The mean of In-campus students' Sleep Deprivation is 63.38 and out campus students' Sleep Deprivation is 86.28.

Table - 1

Variable	Group	N	M
Gender	Male	50	84.42
	Female	50	65.24
Campus	In-Campus	50	63.38
	Out-Campus	50	86.28

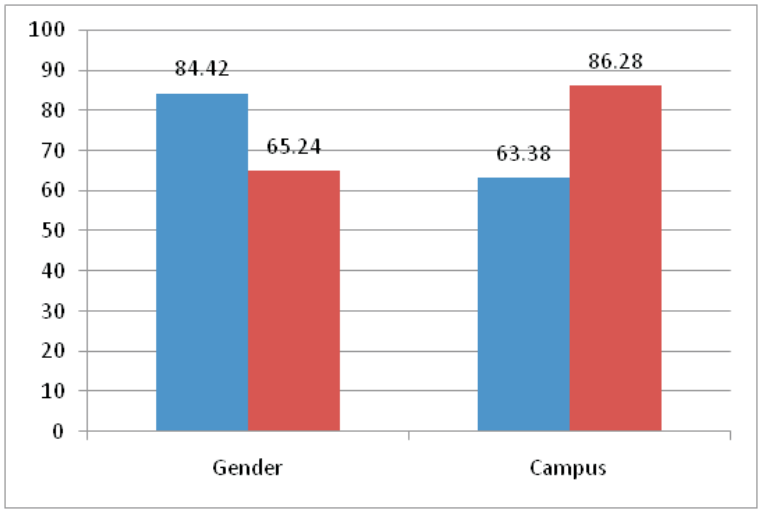

Figure 1: Mean of Sleep Deprivation of Male and Female students, and In-campus and Out-campus students

Table-2 revealed that the relationship between Sleep Deprivation and Academic Achievement of 10th standard students. It is revealed that there is a negative significant relationship (r=-0.609, p=0.000) between Sleep Deprivation and Academic Achievement. Hence the null hypothesis "There is no significant relationship between Sleep Deprivation and Academic Achievement of 10th standard students" is rejected.

Table - 2

Variables	Relationship (r)	Significance
Sleep Deprivation and Academic Achievement	-0.609	p>0.01

The above table exposed that if the students' Sleep Deprivation increases, then the students' Academic Achievement decreases and vice versa.

Table-3 shows that the significant difference between male and female students in Sleep Deprivation. It is revealed that the calculated t-value 64.029, which is greater than the tabulated t-value 1.96. Hence, the null hypothesis "There is no significant difference between male and female students in Sleep Deprivation" is rejected at 0.01 level of significance. The male students have more sleep deprivation than the female students.

Table - 3

Variable	Group	N	M	SD	df	t-value	Sig.
Gender	Male	75	84.42	1.64	148	64.029	p>0.01
	Female	75	65.24	2.01			

Table - 4 shows that the significant difference between In-campus and Out-campus students in Sleep Deprivation. It is revealed that the calculated t – value 50.52, which is greater than the tabulated t-value 1.96. Hence, the null hypothesis "There is no significant difference between in-campus and out-campus students in Sleep Deprivation" is rejected at 0.01 level of significance. The out-campus students have more sleep deprivation than the in-campus students.

Table – 4

Variable	Group	N	M	SD	df	t-value	Sig.
Campus	In-campus	75	84.42	3.21	148	50.52	p>0.01
	Out-campus	75	65.24	2.26			

DISCUSSION

Sleep may be the one of the most important factors for student success and neglect. Many students sacrifice sleep hours in order to work, play or get school projects completed. Consequently, most students think that they can function well when they don't get sleep the turn is they cannot. In this study, there is a negative significant relationship between sleep deprivation and academic achievement. This result supports the findings of the study of Alya Atieah Al Ghamdi (2013) and Giuseppe Curcio, Michele Ferrara, Luigi De Gennaro (2006). It is concluded that sleep deprivation reduces the students' achievement. And also in this study, the male students have more sleep deprivation than female students. It obviously shows that the male students' achievement is low compared with female students because of sleep deprivation. Male students have more divertive factors out of school and home. The out-campus students have more sleep deprivation than the in-campus students. It obviously shows that the out-campus students' achievement is low compared with in-campus students. The out-campus students have more divertive factors out of school and home, the sleeping duration also very less when compared with in-campus students. In In-campus, the students strictly follow the time for sleep and study. This may increase the achievement of in-campus students.

CONCLUSION

For many people, this pressure is related to inadequate sleep and daytime somnolence. several factors contribute to the current, as well as the students' own unit of time physiology . category times square measure usually regular inconsiderately of the scholars.Inadequate sleep hygiene is common, as students usually use technology and substances that compromise sleep quality and amount . This chronic sleep deprivation could impair educational performance. Students WHO attain comfortable sleep should struggle with somnolence thanks to sleep disorders.

more analysis is required to not solely verify a way to best educate students regarding the importance of sleep and also the consequences of sleep deprivation, however additionally a way to translate this information into apply.Electronic or web-based interventions is also economically possible ANd enticing to an electronically savvy demographic. the varsity and fogeys got to perceive, acknowledge, and publicize that policies and sophistication schedules could have substantial impacts on the sleep, learning, and health of their students. Investigation of recent approaches to market sensible sleep and sleep habits may have important public health impact and additionally the action of the scholars

REFERENCES

1.Alya Atieah Al Ghamdi (2013) Sleep Deprivation and Academic Performance of Students in the Collage of Nursing at King Saud University. World Applied Sciences Journal 27 (2): 155-167, 2013.
2.Anderson, M., T.V. Petros, B.E. Beckwith, W.W. Mitchell and S. Fritz, (1991). Individual differences in the effect of time of day on long-term memory access. American Journal of Psychology, 104: 241-255.
3.Dahl RE (1996). The impact of inadequate sleep on children's daytime cognitive function. Semin

Pediatr Neurol, 1996; 3: 44-50.
4.Durmer JS, Dinges DF (2005). Neurocognitive Consequences of Sleep Deprivation. Seminars in neurology, 2005; 25 (1):117-129.
5.Gray, E.K. and D. Watson, (2002). General and specific traits of personality and their relation to sleep and academic performance. Journal of Personality, 70: 177-206.
6.Heuer, H., O. Kohlisch and W. Klein, (2005). The effects of total sleep deprivation on the generation of random sequences of key-presses, day instruction. Bulletim of the Psychonomic numbers and nouns. Q J. Exp Psycho A., 58: 275-307.
7.Polzella, D.J., (1975). Effects of sleep deprivation on short-term recognition memory. Journal of Experimental Psychology, 104: 194-200.